

AMENDMENT**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Currently Amended) A two-fluid nozzle for cleaning substrates which mixes gas and liquid internally and injects liquid droplets with gas so as to clean a substrate, comprising:

a gas supply passage for supplying gas, a liquid supply passage for supplying liquid, and a lead-out passage for leading out internally-formed liquid droplets which are formed by internally mixing gas and liquid,

wherein said gas supply passage and said liquid supply passage open toward an entrance of said lead-out passage which is formed at a rear end of said lead-out passage, and mix the gas and the liquid in the vicinity of said lead-out passage entrance,

wherein an injection port for injecting liquid droplets to the outside is formed at the front end of said lead-out passage,

wherein a transition between the lead-out passage and the injection port is step-wise such that a cross-sectional area S_b of said injection port is smaller than a cross-sectional area S_a of said lead-out passage,

wherein a cross-sectional area S_c of an exit of said gas supply passage is smaller than the cross-sectional area S_a of said lead-out passage,

wherein said lead-out passage is formed in a straight shape,

wherein the cross-sectional area S_b of said injection port is constant from an entrance thereof at the step-wise transition to an exit thereof and

wherein the cross-sectional area S_c of the exit of said gas supply passage is equal to the cross-sectional area S_b of said injection port or smaller than the cross-sectional area S_b of said injection port.

2. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1,

wherein a ratio $S_a : S_b$ between the cross-sectional area S_a of said lead-out passage and the cross-sectional area S_b of said injection port is 1:0.25 to 0.81.

3-4. (Canceled)

5. (Previously presented) The two-fluid nozzle for cleaning substrates as set forth in claim 13, wherein the cross-sectional area S_c of the exit of said gas supply passage is 1.13 mm^2 to 6.16 mm^2 .

6. (Previously presented) The two-fluid nozzle for cleaning substrates as set forth in claim 13, wherein the cross-sectional area S_c of the exit of said gas supply passage is 1.77 mm^2 to 4.91 mm^2 .

7. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1, wherein said lead-out passage is formed in a straight shape, and the cross-sectional area S_a of said lead-out passage is constant.

8. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1, wherein a length L_1 of said lead-out passage is 10 mm to 90 mm.

9. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1, wherein a length L_2 of said injection port is 30 mm or shorter.

10. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1, comprising a liquid introduction passage in an annular shape surrounding said gas supply passage, and having a structure such that

said gas supply passage is arranged coaxially with said lead-out passage,

said liquid supply passage is opened on an outer peripheral face of said liquid introduction passage,

a taper portion is formed with a diameter which gets smaller toward a front end side in said liquid introduction passage,

the taper portion is opened between said gas supply passage and said lead-out passage,
and

gas supplied from said gas supply passage and liquid introduced from said liquid introduction passage are mixed to form liquid droplets and the liquid droplets are lead out via said lead-out passage.

11. (Original) The two-fluid nozzle for cleaning substrates as set forth in claim 1,

wherein said injection port is formed with a vertical cross-sectional shape of an exit side periphery having a right angle or an acute angle.

12. (Original) A substrate cleaning apparatus, comprising:

a two-fluid nozzle for cleaning substrates as set forth in claim 1;

a spin chuck for holding a substrate substantially horizontally; and

a drive mechanism for moving said two-fluid nozzle for cleaning substrates above the substrate.

13. (Currently amended) A two-fluid nozzle for cleaning substrates which mixes gas and liquid internally and injects liquid drops with gas so as to clean a substrate, comprising:

a gas supply passage for supplying gas, a liquid supply passage for supplying liquid, and a lead-out passage for leading out liquid drops formed by atomizing liquid with gas, and an injection means, wherein

said gas supply passage and said liquid supply passage open toward an entrance of said lead-out passage which is formed at a rear end of said lead-out passage, and mix the gas and the liquid in the vicinity of said lead-out passage entrance,

said injection means ~~re-atomizing~~ re-atomizes liquid drops passed through said lead-out passage and ~~injecting~~ injects liquid drops to the outside, and

said injection means ~~being~~ is connected to a front end of said lead-out passage by a step-wise transition between said lead-out passage and said injection means.